

Mwaniki Charles,

M.Sc., B.Sc. (Electrical and Electronic Engineering)

Specialized in Electrical Power Systems and Machines



ACADEMIC QUALIFICATIONS:

- 2013- To date** Pursuing Doctor of Philosophy degree in Electrical Engineering, Jomo Kenyatta University of Agriculture and Technology
- 2009 – 2012:** Master of Science degree in Electrical & Electronic Engineering, University of Nairobi. Specialized in Electrical Power Systems and Machines
- 1994 – 1999:** Bachelor of Science degree in Electrical & Electronic Engineering, University of Nairobi

PROFESSIONAL QUALIFICATIONS:

- 2002 – 2003:** Postgraduate Diploma in Education, Kenyatta University.
- March 2012:** Registered Graduate Engineer (R.GEng.) with Engineers Registration Board of Kenya

RESEARCH WORK AND PUBLICATION

- 2009 – 2012:** “The Impact of Power Transformer Parameters on Voltage Collapse in a High Voltage A.C Network”. M.Sc. Thesis, Dept. Electrical & Electronic Eng. University of Nairobi, Nairobi, Kenya, 2012
- April 2012:** Voltage Stability Improvement using the 21st century Power Transformer, *Innovative Systems Design and Engineering Journal*, Vol. 3, No 4, 2012, Pg.21-28
- August 2013:** Metaheuristic Optimization: A new approach to load shedding, *2013 KSEEE International Engineering conference, DeKUT, Nyeri, Kenya. August 2013, Vol. 3, 2013, Pg. 20-26*

- May 2014:** The Dependency of Bus Voltage and Frequency in Load Shedding, 2014 *International Annual Conference on Sustainable Research and Innovation (SRI)*, JKUAT, Juja, Kenya. May 2014, Pg. 31-35
- May 2015:** Simultaneous Consideration of Bus Voltage and Frequency in Load Shedding in a High Voltage AC Network, 2015 *International Annual Conference on Sustainable Research and Innovation (SRI)*, Kenya School of Monetary Studies, Nairobi, Kenya. May 2015, Pg. 30-34
- July 2015:** Optimal Under-voltage Load Shedding using Cuckoo Search with Levy Flight Algorithm for Voltage Stability Improvement, *International Journal of Engineering Science Invention (IJESI)*, Volume 4, Issue 7, July 2015, Pg. 34-41
- October 2015** Optimal Under-frequency Load Shedding using Cuckoo Search with Levy Flight Algorithm for Frequency Stability Improvement, *International Journal of Emerging Technology and Advanced Engineering (IJETAE)*, Volume 5, Issue 10, October 2015, Pg. 8-14
- Dec. 2015** Amalgamated Optimal Load Shedding using Cuckoo Search with Levy Flight Algorithm for Frequency and Voltage Stability Improvement, *International Journal of Emerging Technology and Advanced Engineering (IJETAE)*, Volume 5, Issue 12, December 2015, Pg. 9-15

TEACHING EXPERIENCE

- Nov 2014 – To date:** Full Time Lecturer, Machakos University College. Teaching Electrical Power Systems and Electrical Machines
- 2010-2014:** Part-time Lecturer, Technical University of Kenya. Teaching Electrical Power Systems, Control systems & Electrical Principles.
- 2011-2014:** Part-time Lecturer, Dedan Kimathi University of Technology. Teaching Microprocessors systems, Digital Systems Design, Electrical Machines, Power Electronics and Electric Circuit Theory.

Have been rated very highly (above 82% overall) after regular appraisal exercises done during the last three semesters.

- 2011- 2014:** Part-time Lecturer, Kenya Power Training school.
Have produced excellent results (98% pass) in Microcontroller and Microprocessor systems in the National Technical Examinations
- 2003 – 2014:** Lecturer, Thika Technical Training Institute. Teaching Microprocessor Systems, Control Systems, Have produced excellent results (100% pass) in Control systems and Microprocessor systems in the National Technical Examinations

INVOLVEMENT IN WORK ENVIRONMENT

- May 2015 – To date:** Chairman of Department, Electrical and Electronic Engineering, Machakos University College.
- 2013 – 2014** Head of Department (Examinations), Thika Technical Training Institute.
Duties included registration and administration of internal and national examinations.
- 2005 – 2009:** Assistant Registrar (Examinations), Thika Technical Training Institute.
Duties included registration and administration of internal and national examinations.
- June 2008:** TIVET Curriculum design, Kenya Institute of Education.
Participated in design of Control Engineering Course for Mechanical and Automotive Engineering.
- March 2009:** Electrical Engineering Syllabus revision and writing, Kenya Institute of Education.